

**We claim:**

1. An integrated circuit for the authentication of a consumable storage device by an apparatus, the integrated circuit comprising a memory space which contains encrypted data defined by a message authentication code (MAC) applied to data relating to a consumable stored by the device and by at least one secret key (K) shared by the apparatus for decryption of the data, the MAC being a construction of a cryptographic function.
2. An integrated circuit as claimed in claim 1, in which the cryptographic function is a hash function such that the MAC is an algorithm known as HMAC.
3. An integrated circuit as claimed in claim 2 in which the hash function is one of an MD5 function and a SHA-1 function.
4. An integrated circuit as claimed in claim 2, in which the hash function is an SHA-1 function.
5. An integrated circuit as claimed in claim 4, which is configured to define a number of temporary registers and rotating counters and to calculate an output word on an iterative basis by calculating and allocating words to respective registers during processing of the SHA-1 function.
6. An integrated circuit as claimed in claim 1, in which the memory space of the integrated circuit includes two secret keys,  $K_1$  and  $K_2$ , the integrated circuit being configured to that the key  $K_1$  is used to decrypt an encrypted random number generated by the apparatus and the key  $K_2$  is used to decrypt encrypted data stored in the memory space.
7. A method of encrypting data relating to a consumable of a consumable storage device for an apparatus and stored by an integrated circuit, the method including the steps of:
  - applying a message authentication code (MAC) to the data using at least one secret key shared by the apparatus to decrypt the data, the MAC being a construction of a cryptographic function.